

AGRICULTURAL NEWS LETTER

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This publication contains information regarding new developments of interest to agriculture based on laboratory and field investigations by the Du Pont Company. It also contains published reports of investigators at agricultural experiment stations and other institutions as related to the Company's products and other subjects of agricultural interest.



AGRICULTURAL NEWS LETTER

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The AGRICULTURAL NEWS LETTER serves as a medium of reporting new developments and new ideas in the field of agriculture, particularly as they are related to advancements through research. Material appearing herein may be reprinted in whole or in part, in the interest of advancing the general knowledge of new agricultural practices.

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WHAT FARM EDITORS ARE SAYING -- * * * * * IN THIS ISSUE * * * * *

"Young farm folks can do no greater service than to get a college education and return to the farm, or to some work closely related to agriculture." -- Raymond H. Gilkeson in KANSAS FARMER

"America is being bountifully fed by the less than 10 per cent of our population who are full-time farmers. Perhaps we will soon reach the point where only five per cent of our people can raise our food. In Russia the proportion of manpower needed on the land more nearly approaches 50 per cent." -- Paul C. Johnson in PRAIRIE FARMER

"The ever-rising American standard of living comes largely from better tools, which permit one man to produce more goods." -- Carroll P. Streeter in FARM JOURNAL

"If we can retain our system of free enterprise and individual and corporate initiative, backed by adequate basic and practical research, America will continue to lead the world in food production and better living." -- Fred I. Jones in THE INDIANA FARMERS GUIDE

"It has been pointed out that even though the major part of production comes from relatively few farms, few individual farmers operate enterprises large enough to warrant the undertaking of a research program on their own account. Yet they need the results of research. But how many are well aware of the potential benefits? We still hear frequently of the ill-run farms within sight of agricultural colleges." -- Walter J. Murphy in JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY

"We believe in the free enterprise system that has made our nation great and pledge our support to uphold this great American tradition." -- J. O. Matlick in THE TENNESSEE FARMER

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FARM USE OF PETROLEUM PRODUCTS

IMPROVED BY CHEMICAL ADDITIVES

Little has been said about many relatively recent developments in improving the petroleum products used every day on the farm. Yet the oils, greases, and even the gasoline used in lubricating or fueling tractors, combines and other self-propelled farm equipment are a vastly improved group of products compared with similar products of a few years ago.

Because all gasolines today contain certain chemical additives, the farmer need no longer worry about clogged fuel lines or starting difficulties even after his machines have been out of service all winter.

The need for these chemical additives first arose back in the 'thirties when a new catalytic cracking process was adopted by petroleum refiners to wring more gasoline out of a barrel of crude oil. This gasoline was not as stable as had been the gasoline which was simply distilled from the crude. The new gasoline tended to oxidize, or form gum, in storage whether it was in a large storage tank or in something as small as a carburetor of a tractor being stored all winter.

Answers to storage problems were not long in coming, though, in the form of chemical additives known as antioxidants or inhibitors. These additives prevent oxygen in the gasoline from attacking some of the gum-forming constituents of the gasoline. They also may serve to change the composition of foul-smelling sulfur compounds present in some freshly refined gasoline. The refiners could, of course, handle the oxidation problem by special acid or clay treating, but these processes were too costly in most cases.

Later it was found that not all gasolines treated with these antioxidant additives could be stopped from forming gums in storage, and a rather unusual thing was discovered as the cause of this new problem. In refining and in storage, and even in usage in a vehicle, gasoline passes through much copper tubing. As a result, it sometimes picks up some of the copper in the tubing and the copper acts as a catalyst, causing the formation of gum. To overcome this newly discovered problem, the Du Pont Company developed a product known as a metal deactivator. This product surrounds the microscopic copper particles making them ineffective.

Gasoline is not the only petroleum product used on the farm which has been improved by the use of additives. Oils, greases, fuel oil, and a host of other petroleum-derived materials work more efficiently because of the use of chemical additives developed to enhance their beneficial characteristics.

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TREATED NYLON CONTAINERS LATEST FOR GRAIN STORAGE

Coated nylon fabrics, in the form of huge bags or tents, are being tested and used for the storage of grain in a number of areas this fall and winter.

Lightweight, weatherproof, resistant to mildew, rot, and insect damage, the coated nylon containers are believed to be one of the most practical types of temporary grain containers yet developed.

The bag shown on this page is one of a series of experimental containers being constructed by a New York firm. Several are now undergoing tests at agricultural experiment stations. Meantime, a large canvas-converting firm is producing tent-like tarpaulins for a mill and elevator company, using neoprene-coated nylon for the protection of huge piles of wheat for which no storage bins are available.

Containers similar to the one pictured may be made in sizes to handle from 1,000 to 1,000,000 bushels of grain. Based on tests conducted at Rutgers University and at the Utah Agricultural Experiment Station, the containers, with proper care, should hold up for many years.

The container shown weighs about 100 pounds and has an estimated capacity of around 1,100 bushels. Resembling an inverted cone, it stands nine feet high and is 22 feet in diameter, with three-foot sides. It is erected over a ventilating center shaft and is equipped with 24 vents, with eight coil ventilating tubes connected from the center shaft to every third vent. Vents are aluminum screened and double flapped.

Various types of coatings have been tested on nylon



New efficiencies and economies in grain storage on the farm are being made possible through the use of coated nylon fabric containers. The huge bag shown here is one form in which this material is being supplied for farm use. (Photo courtesy "Feedstuffs.")

fabrics used for this purpose. One piece of coated fabric, according to a report from Utah, showed no sign of deterioration after being buried for 15 months in a moist mixture of soil, manure, and fertilizer salts at 80° F.

As indicated in the picture, these fabric grain containers are constructed in a manner to facilitate loading and unloading with conventional farm equipment. Either in bag or tent form, they are readily transportable and if punctures of the fabric occur in handling, they can easily be repaired with patching kits supplied by coater or fabricator.

Certain of these units have already been approved by the U. S. Department of Agriculture for storage of grain under loan, the manufacturers report.

* * * * *

* PHENOTHIAZINE IN THE FEEDLOT *

* *

* While a number of recent field experiments in various parts of the country have shown the economic importance of controlling internal parasites of livestock on range or pasture, the first such test to show that phenothiazine treatment for this purpose, administered to feedlot cattle, is effective and practical has just been reported by R. W. Smith, Du Pont representative on the Pacific Coast. *

* *

* "The test was conducted on a commercial feedlot in the Imperial Valley of California," Mr. Smith relates. "The 208 cattle used were Hereford steer calves from the same general area of the Southwest, weighing an average of 560 pounds. The experiment ran a total of 151 days. Two groups of 104 animals each were handled similarly, particularly with relation to the rations fed. (Both groups received a starter ration for 61 days, and a finishing ration for the last 90 days.) It was demonstrated by worm egg counts at the inception of the experiment that the animals in both groups had light to moderate worm infections." *

* *

* "Each animal in the treated group received a therapeutic dose of 60 grams of phenothiazine in a drench at the beginning of the experiment. Thereafter, for the balance of the experiment, they had before them at all times a low-level phenothiazine-salt mixture in a ratio of 1-9 (10 per cent phenothiazine by weight). The control group received no phenothiazine. *

* *

* "In this commercial feedlot test the total cost for the group of steers treated with phenothiazine was less than one-half cent per pound of gain, including the cost of phenothiazine. The treated group outgained the untreated group by 16 pounds per head and when slaughtered dressed out 1.51 per cent better. From the extra gains and greater feed economy realized by the treated group there was an additional profit per head of approximately \$2." *

* * * * *

INDUSTRIAL "PATTERN FOR SUCCESS"

CAN APPLY EQUALLY TO AGRICULTURE

The operational pattern that has led the Du Pont Company down a rewarding road to industrial success can be adapted to the operation of a farm business and should produce the same happy results, James Q. du Pont believes.

"Pattern for Success" was the subject of Mr. du Pont, an administrative assistant in the Du Pont Company's Public Relations Department, discussed recently in an appearance on the "Farm Forum" conducted by Don Tuttle over WGY, Schenectady, N.Y. The underlying principles of business operation and human relations which have made Du Pont and many other industries successful, when other firms failed, have long been a subject of study by Mr. du Pont. Boiled down to their fundamentals and related to agriculture as he interpreted them, the nine key points in the success pattern are:

1. **FILL A NEED.** Certainly people need to eat, and are eating better today than ever before in most of the world. So by the very nature of his business, the farm operator qualifies automatically on this first point.

2. **HAVE JOB KNOW-HOW.** Farm people with a farm background have a heritage of generations of know-how in working the soil, planting, raising, and harvesting crops and livestock, and the other daily chores and details of farm management. But agricultural experiment stations, industrial laboratories, and the world of both private and governmental research are constantly uncovering newer and better ways of handling jobs. The successful farmer must ever improve his know-how by investigating, with an open mind, new techniques of doing his job and adopting those new methods which can save him money or time, or improve his product.

3. **MEET COMPETITION.** Just as horse-power farming failed to keep pace with tractor-power operations, new techniques, new pieces of equipment, new pest control chemicals -- all enabling the modern farmer to outproduce the generations that have gone before -- have meant that he must keep his operation modern if his costs of production are to compete with those of his neighbor. Competition in this sense has not been competition for a market so much as competition for a better way of life, made possible by a better return on the investment in money, time, and land.

4. **RESEARCH.** The importance of research in developing better, more efficient methods of farming has been receiving more and more attention in recent years. While he profits greatly from the results of basic research in the laboratories and experimental stations, the farmer must test many of these new ideas in his own "research program" to determine whether new crops are

suitable on his farm, whether improved types of farm machinery can be readily adopted into his particular operation, etc. And the vital matter of maintaining safe operating conditions becomes a subject of intimate concern on the farm. The injury that occurs from trusting the untrustworthy bull, or from leaving the guard off the silage chopper, may even involve a son or daughter.

5. THRIFT AND ECONOMY. Since the days when milk was separated on the farm and the skimmed milk fed to pigs, calves, or chickens, thrift has been a watchword on any well-managed farm. Today, with larger investments in machinery, buildings, and livestock, it is more important than ever that the pennies be watched so dollars will not slip away.

6. ACT SO THAT ADDITIONAL CAPITAL CAN BE SECURED WHEN NEEDED. This means more than just keeping on friendly terms with your banker. It means keeping up the physical condition of your farm land and buildings so they may serve as good collateral when a loan is needed. It means developing good markets for your crops so loan agencies will consider those prospective crops as good security. It means keeping your credit rating A-1, so there will be no question about extending additional credit when you require it. But above all, it means establishing and maintaining personal integrity among friends and neighbors, produce buyers and milk haulers, to the point that your honesty, ability, and ambition are unquestioned.

7. PLOW BACK EARNINGS -- HEAVILY! This is something that good farms accomplish literally, through the plowing under of fertilizer. Investing farm earnings in needed improvements is in every way an investment in the future welfare of the farm family. The old expression of making the farm "pay for itself" is an oversimplification of the sort of money management that takes upkeep of the property into consideration along with providing for immediate personal needs.

8. DIVERSIFY AND DEPARTMENTALIZE. The old story of not putting all your eggs in one basket, plus the good advice that the girl who gathers those eggs may not be able to plow the field -- these homespun rules may be more important than ever in modern times. In a multiple crop operation, one crop which sells at a profitable price may often save the day when other commodities become a drug on the market. Also, in this day of specialization, it is becoming increasingly smart to assign every person on the farm his or her particular chores and responsibilities, so each may know as much as possible about the jobs they perform, and may work out methods of performing those tasks most efficiently. Perhaps the most common practice in this division of farm responsibilities is the tendency to hand the work of farm record keeping to the lady of the house, whose patience and thoroughness is often a valuable asset in the farm business. Someone must be willing to be "chained to the record books."

9. OWNER MANAGEMENT AND PERSONAL ATTENTION TO BUSINESS. Here again, the typical American farmer owns and manages his business. If he is a successful manager, he has learned that he alone must assume the responsibility of taking calculated business risks when opportunities present themselves.

In the Du Pont Company, Mr du Pont pointed out, there is a tradition of long standing that pervades the execution of all nine of these points in the success pattern. That tradition calls for the "right treatment of people" -- employees, customers, friends, stockholders, the public in general.

This philosophy in the conduct of a business -- be it industrial or agricultural -- is a foundation block for which there is no substitute, he believes, and upon which the successful fulfillment of the nine points in the pattern will either stand or fall, depending on how sturdily the foundation is built.

* * * * *

* TREES FOR TOMORROW *

* * * * *

* Remember the speakers who used to address school *
* assemblies and warn that, within our lifetimes, we would see *
* the end of all timber production in this country? *

* Either they were poor prophets, or those speeches *
* accomplished their mission. For last year, the U. S. Depart- *
* ment of Agriculture tells us, an all-time record of 811,066 *
* acres of land were planted to trees for tomorrow's timber *
* crop. What's more, 85 per cent of this record planting was *
* on privately owned land. *

* In six years, tree planting has increased 133 per *
* cent throughout the country. Private landowners last year *
* planted 687,388 acres. Of this amount, wood-using industries *
* alone planted 266,510 acres of their own lands, as compared *
* with 219,798 acres the year before. *

* Two states topped the 100,000-acre mark for tree *
* plantings on both government and private lands. These were *
* Florida with 106,630 acres and Georgia with 103,464. Other *
* states where plantings were heavy included Louisiana, Missis- *
* sippi, Alabama, Texas, South Carolina, Washington, Virginia, *
* and Arkansas, in that order. *

* With new insecticides to protect our forests from *
* insect damage, and with many new chemical treatments to pro- *
* tect lumber against termites and decay, and to make it flame *
* retardant, America's forest industry may serve our growing *
* population in the future as never before. *

* * * * *

ASPARAGUS STILL HEALTHY AFTER
DOUBLE DOSAGES OF WEED KILLER

Twice as much "Karmex" W herbicide as is ordinarily recommended for weed control in asparagus, applied consistently over the past five years, has not hurt the growth of a row of the plants at the University of Delaware experimental station at Georgetown, Del., but has certainly kept the ground "slick as a whistle" so far as weeds are concerned.

The experimental overdosage of "Karmex" W (four pounds per acre in April and the same amount again in June) has been applied deliberately to the test row to see whether a build-up of the new substituted urea herbicide in the soil would have adverse effects on the asparagus plants. So far, after five straight years on this schedule, the only visible effect is an unusually healthy row of asparagus -- higher and more vigorous than neighboring rows partially choked with weeds.

This application rate is twice the maximum recommendation by either the University of Delaware or the Du Pont Company on its label for "Karmex" W. The recommended dosage of one to two pounds of the weed killer per acre, applied in April and



June, for the sandy loam in which these plants are growing (two to three pounds for heavy soils) produces outstanding weed control in asparagus fields. Only practical significance of the experimental overdosage at the Georgetown Station is the indication it gives of the margin of safety growers enjoy when using this material at the recommended rate in asparagus. Growers should, of course, continue using "Karmex" W at the low rates recommended.

The healthy, weed-free row of asparagus at right received an experimental treatment of double the recommended dosage of "Karmex" W. herbicide for the past five years. Note grass and weed growth in untreated neighboring rows.

#####

"MICROCLIMATE" -- "ROW PLACEMENT"

RECENT ADDITIONS TO FARM LANGUAGE

Two new agricultural terms -- "microclimate" and "row placement" -- are being heard more and more frequently these days, and recent experimental evidence indicates that dangers which may accompany the condition described by the first term can often be combatted by the practice described by the second term.

To explain, microclimate is simply the atmospheric environment near the ground surface where the plant grows -- and row placement is a special planting time application of fungicides designed to protect the seed and growing plant from the time of germination until it is large enough to withstand disease-promoting conditions inherent in this ground-level climatology.

Cotton soreshin (damping-off) is an example of a microclimate disease which occurs in irrigated areas of low rainfall, such as the cotton-growing sections of Arizona and California's San Joaquin Valley. Here the microclimate immediately surrounding plants may be moist enough to support fungous diseases, even though the general area climate may be semi-arid. Damping-off of sugar beets and diseases which attack young bean seedlings are also thought to be due largely to microclimate conditions.

Row placement applications of the proper fungicides are made by means of one or two nozzles directly over the row at planting time. Fungicides at the rate of two to five pounds per acre are sprayed directly into the open row, which is then closed in the same operation. This creates a band of fungicide in the soil surrounding the seed and extending up to the surface of the ground so the growing plant has continuous protection until it has emerged.

But of course not all plant problems brought about by microclimate situations are corrected by this row placement technique.

In Sacramento Valley of California, for example, although the air is warm and dry, peach growers are still threatened with brown rot. Microclimate studies show that as peaches are sizing up growers make frequent surface irrigations that result in under-tree humidity by day and in condensation at night on the fruit. This provides sufficient moisture along the surface of the peach to supply ideal conditions for the brown rot fungus.

Nor are microclimate problems limited to irrigated crops. Work carried on at the U. S. Regional Pasture Research Laboratory at State College, Penna., for example shows that

temperature and humidity within a stand of close-growing plants, such as forage crops, differ to a surprising extent from measurements made a few inches above the crop.

It was found that weeds, such as matted chickweed in alfalfa, hold moisture and slow down the movement of air around the stems and lower leaves of the plant, creating a favorable environment for the spread of disease. In some cases, such weed problems can be solved with the use of selective weed-killing sprays.

The U. S. Department of Agriculture reports that as a result of studying microclimate during the past five or six years plant scientists have gained a much better understanding of conditions under which many crop plants live. These studies have resulted in better knowledge of winterkill of legumes, in the development of varieties more resistant to conditions that bring it about, and in legumes and grasses better suited to growing in the limited light available near the ground with some of the thick forage crop mixtures.

* * * * *

* DON'T SPOIL THAT VENISON *

* *

* Deer meat is delicious, cooked in any of a number of *
* ways -- but it must be handled properly if the venison dinner *
* is to live up to the expectations of the hunter. *

* *

* Here are a few tips passed on by Henry P. Davis, *
* public relations manager of Remington Arms Company, Inc., and *
* an expert in the preparation and cooking of all sorts of game: *

* *

* "Pounding with the back of a heavy knife will do much *
* to tenderize venison steaks and chops. If you will lightly *
* roll your cuts in dry flour before placing them in the pan, *
* this will keep in the juices. In frying or sauteing, lean *
* meats are much more tasty and tender when cooked quickly. *
* Long cooking, at low heat, causes toughness. In frying veni- *
* son, do not cover the pan until a few minutes before serving, *
* as covering too soon will cause the meat to boil. Rubbing a *
* few dabs of butter into dry meats will generally restore mois- *
* ture. Do not salt your venison too soon, as this may cause *
* the loss of juice and flavor. However, fried or sauted veni- *
* son should be salted before taking it from the pan." *

* *

* Offering many more tips on the cooking and serving *
* of wild game, a well illustrated little booklet titled "How to *
* Dress, Ship, and Cook Wild Game" is available from Remington *
* Arms Company, Inc., Bridgeport, Conn. Copies may be obtained *
* by sending 10 cents to the Advertising Division there. *

* *

AIR CONDITIONING -- ON WHEELS

A review of recent developments and prospective uses of air conditioning for mobile units on the farm front.

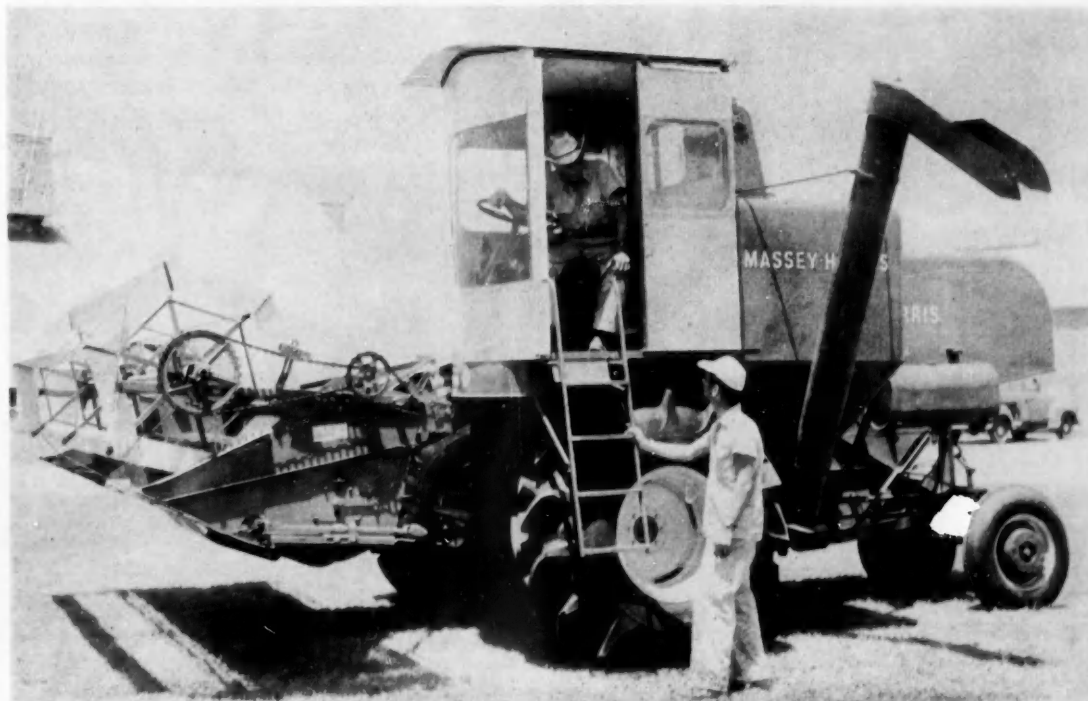
How'd you like to cultivate the potato field, mow the hay, combine the grain, and do every other equipment-riding, hot weather job next summer in cool comfort?

Well, next summer may be a little too soon to expect this sort of heat-beating luxury, but the time is in sight when many pieces of mobile farm equipment will be available with air conditioning.

Right now, farmers with a flare for inventiveness and a pretty good farm shop might be able to install their own air-conditioning unit on some of the rolling stock, just as the Cardiff brothers, Charles and John, rice farmers of Katy, Texas, did a couple of years ago on a combine.

"We just talked about it for a while, drew a sketch, and all pitched in," explains Charles Cardiff.

The sketch was drawn with soapstone on the floor of the Cardiff shop. The job necessitated enclosing the driver's seat



Here's the air-conditioned rice combine being used by the Cardiff brothers (Charles in the air-conditioned cab and John talking with him) of Katy, Texas... Note the sliding door and the huge front view panel built into the aluminum sheet cab the brothers constructed. The air-conditioning unit is just behind the seat.

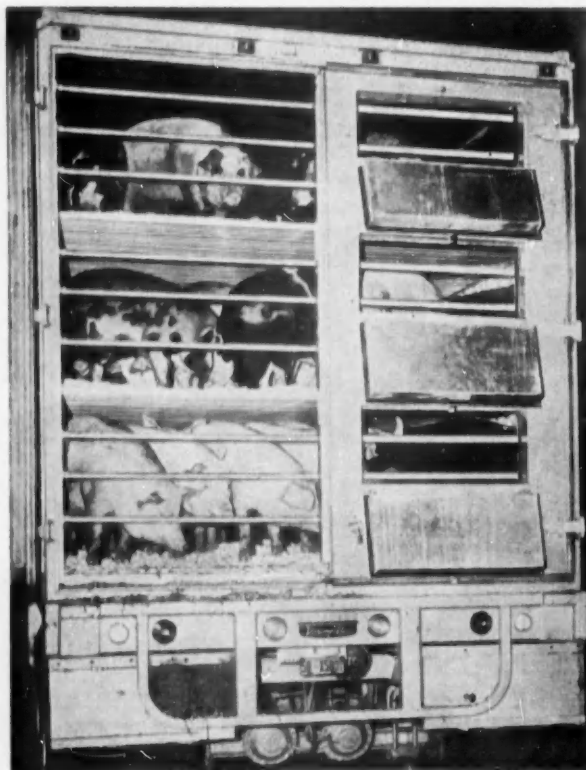
with a cab constructed of aluminum sheet. A sliding door on the side was installed to assure good closure and easy access to and from the controls. The air-conditioning unit -- a two-ton job which had been used to cool an office in the barn -- was installed just behind the seat so it would be next to the motor of this harvester-thresher. A huge "windshield" was incorporated in the front panel of the cab, which together with sizable windows in the door and in the opposite side gives the driver good vision.

When rice was being combined this summer, outside temperatures were ranging upwards of 90° F., but it was a good 20° cooler inside the air-conditioned cab. And this cool comfort is paying off in another way the Cardiff brothers say. It increases a man's efficiency and the amount of work he can accomplish in a day, they report.

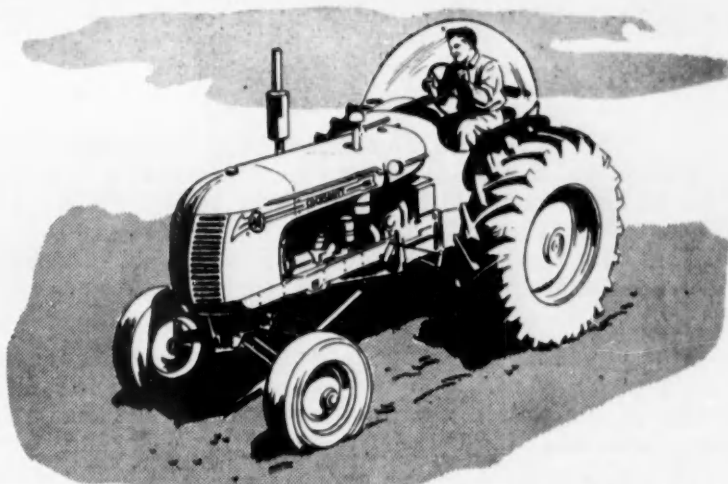
Air conditioning the farm tractor may pose some more complicated problems, so far as enclosing the driver's position is concerned. But one far-sighted farm equipment company has recently predicted that air-conditioned tractors aren't far away. Enclosed cabs for some tractors have been worked out, they point

AIR-CONDITIONED HOGS — Three views of the special trailer constructed for use in hauling m'd-western porkers to a Pacific Coast packer. A five-ton unit capable of changing air in the trailer three times a minute is used. The view at left below shows the rear door of this triple-deck trailer, with vents built into the right panel. Over-all view of the trailer is shown at right, with scene of hogs being loaded into top deck directly below.

Talk about contrasting loads, this trailer can carry such highly perishable items as cut flowers on the return trip. (Photos courtesy Freuhauf Trailer Company)



out. Then indulging in some crystal ball gazing they have even run up a sketch of the way the tractor of the future may look -- the driver seated in a streamlined bubble of clear plastic which allows him vision in all directions, and with the air-conditioning unit mounted behind him.



Driver comfort is the next important step in improving farm machines, according to a spokesman for the Cockshutt Farm Equipment Company, and the most needed improvement in that line is air-conditioned cabs for tractors. The sketch above pictures his idea of what the tractor of the future may look like.

Another phase of agricultural operations where air conditioning has already proved itself is in the field of livestock hauling. Feeling that nothing is too good to keep top quality hogs at their top quality on long hauls, an Omaha trucking company has had a special trailer built, complete with air-conditioned quarters for hogs they haul to a west coast packer. It's a 48-hour trip and the packer attests to the economics involved when he reports that the porkers arrive with no bruise damage and less shrink. He figures he gets one to two per cent better yield.

Of course air conditioning for passenger cars has been available for several years now, and it's just as easy to air condition the cabs of farm pick-up trucks, or any truck for that matter.

But someday these air-conditioner manufacturers may run into a real challenge when the cowboys demand comfort cooling as they ride the range on Old Paint.

CHEMICAL USE OF ANIMAL FATS

The chemical industry will use 500 million pounds of animal fats during the current year, according to a recent issue of the "Chemurgic Digest." Fatty acids, for example, are used as additives in lubricants, cutting oils, polishes, and cleaning compounds. There are more than a million chemical compounds from tallows and edible fats, used in everything from highway paving to disease-preventing drugs.

SELECTIVE TEST SHOWS

METHOXYCHLOR RESIDUE

With the commonly used insecticides now assigned various residue tolerances by the U. S. Food and Drug Administration under the Miller Pesticide Amendment to the Federal Food, Drug and Cosmetic Act, methods of analyzing residues on crops to determine which chemicals have been applied and how much of each remains have become a vital necessity, to enforce this act.

The situation becomes particularly critical in the case of the chlorinated hydrocarbons. A general method such as total organic chlorine may not be sufficient, since such methods of analysis allow no differentiation between the various chemicals in this group of compounds. The tolerances allowed, on the other hand, vary, depending on the specific insecticide employed.

Of particular interest to state enforcement officials and the laboratories where analyses are carried out, is the Fairing-Warrington method. This procedure is specific in its determination of methoxychlor, either qualitatively or quantitatively, even in the presence of closely related compounds.

Since methoxychlor has been assigned the highest tolerance allowable in the chlorinated hydrocarbon group (14 parts per million), the availability of such a method is now especially important, because if methoxychlor has replaced another hydrocarbon insecticide in late-season applications, it is possible to determine the methoxychlor fraction in the residue.

Use of such specific methods of analysis, in conjunction with application of the FDA formula for evaluation of mixed residues of related compounds, should enhance the grower's ability to obtain late-season insect control with methoxychlor, and still meet residue tolerance requirements. If the chlorinated hydrocarbon residue determined by a general method of analysis is within the lower tolerance limits assigned to the other members of this group of compounds, no further analysis is necessary. But, if the residue exceeds these lower limits, but is not as high as 14 ppm, it is a simple matter to employ the qualitative test and determine whether the specific quantitative analysis for methoxychlor should be used.

A booklet describing analytical methods for methoxychlor determination, plus detail sheets on the qualitative tests for this insecticide, are available from the Du Pont Company. Requests may be sent to the editor of this news letter.

#####

A PROSPECT IN INTERNATIONAL RELATIONSHIPS

Report of a Recent Speech by Crawford H. Greenewalt,

President of the Du Pont Company

Free trade between nations can exist only when participants share mutual standards in living conditions, governmental responsibility, and business practice, Crawford H. Greenewalt, president of E. I. du Pont de Nemours & Company, told the Canadian Chamber of Commerce in a speech in Winnipeg in October.

"If trade is to be truly free on a world-wide basis -- surely a laudable objective -- certain conditions would appear to be essential," Mr. Greenewalt pointed out. "We must assume first a state of grace in which mankind will no longer be harassed by war. We must assume second that nations entering into trade on a free basis have more or less equal wage and price structures; otherwise reciprocal advantages would be hard to establish. We must assume finally mutual responsibility of government, so that agreements will be honorably executed and guaranteed. We must assume a devotion to principle so that trade can be conducted in an environment of trust and confidence.

"Unfortunately the world today is neither ideal nor peaceful. We have tensions between nations that make it necessary for each to live in an armed camp -- to promote national self-sufficiency, cost what it may. We have also living standards from nation to nation that run the gamut from bare subsistence to luxury.

"We may deplore that situation as much as we please, but it is real nevertheless, and no trade policy can make sense unless it takes into account the world as it is, not as we hope it will be in some far-off millennium."

He then went on to point out in examples, drawn from Du Pont Company experiences, some advantages and disadvantages which the concept of free trade offers in the world of today. Many of these examples were applicable to the situation American agriculture finds itself in, when seeking export markets for crops which we have produced in over-supply domestically.

"Were it possible so to set tariffs that purely adventitious advantages now possessed by many foreign countries were precisely neutralized, I think we would be content," Mr. Greenewalt said. "Under those circumstances goods would land in the United States on all fours with products made domestically. Then there would be competition to be sure, just as there is competition among American producers, but it would be healthy and valuable to our respective economies, offshore trade would increase, and we should be content to let the competitive chips fall where they may. Of course any such solution would have to be truly reciprocal, with opportunities for export matching

opportunities for import. 'Trade not aid,' to be really effective, must operate in two directions. It can serve no useful purpose if it operates only in one.

"To restate the case, the essential conditions of free trade are, as I see them, a peaceful society, a more or less parallel wage structure, a mutual responsibility of governments, and a common standard of business behavior. These are fulfilled, of course, in the relationships between the various states in my own country, and it is only this fact that enables us to maintain free trade within our own borders. When we in Delaware do business with a firm in California, we know that war is unlikely to disrupt our relationships, that we both pay wages that are roughly comparable, that our state governments maintain reciprocal policies under law, and that identical practices with respect to terms, credit, payments, and so forth will prevail.

"Is there any international relationship in which such conditions can be met?" he asked. "Certainly they are few and far between. Yet there is one where the factors which militate so effectively against free trade elsewhere are almost nonexistent. That is the relationship between the United States and Canada.

"We are both peaceful nations; it is inconceivable that we would not be on the same side of an international dispute. Living standards and wage rates are so nearly alike that differences can be ignored. Our governmental systems are stable and responsible. As individuals, we observe the same code of ethics, morality, and practice.

"Would it not be worth while, then, to look toward the day when all trade barriers between our two countries could be eliminated?

"Is this suggestion shocking? I don't think so if we think of it as an objective. Or if we consider it in the light of not what is good for you or for me, or this company or that company, but what is good for Canada and for the United States. I think the long-range advantages to be gained by each participant would be enormous."

Mr. Greenewalt made it eminently clear that he did not refer to any merging of the two countries.

"Could such a thing be accomplished without political union? I think it could indeed -- I would, in fact, deplore political union as much as anyone here. Within the framework of freedom, competition in governments is perhaps as essential as competition in industry. It is a good thing for Washington to look at Ottawa and Ottawa at Washington to see and recognize at their honest worth such political experiments as each side may attempt.

"As to our more personal relationships, we think

NEW ROADSIDE SAFETY DEVICES MAY
REDUCE "SITTING DUCK" ACCIDENTS

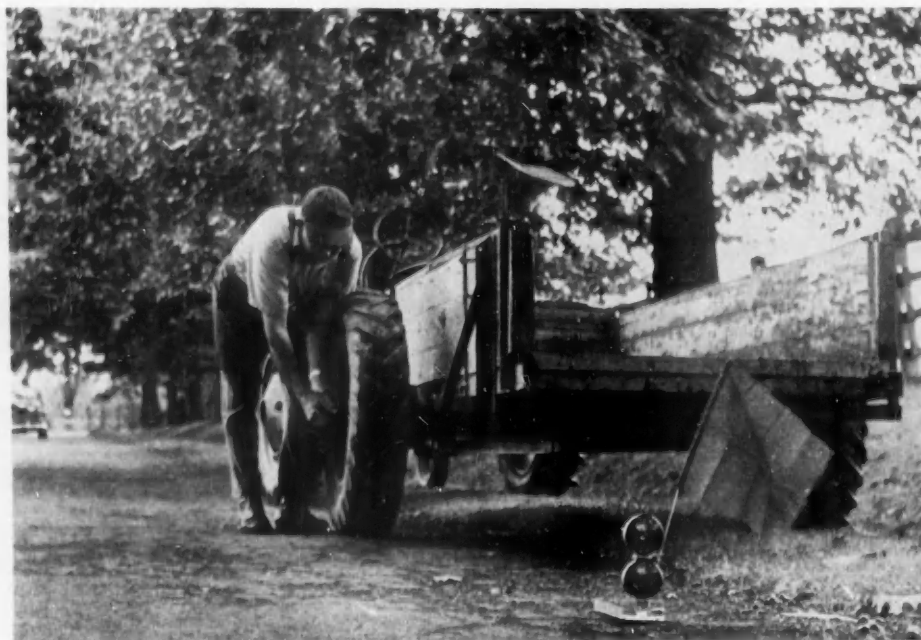
Tractor tool kits and dashboard compartments of farm trucks will accommodate a new safety device that may save lives in event of mechanical trouble along the road.

This is an emergency warning signal -- the sort truck drivers have carried for many years -- now designed in a compact fold-up form for the use of any motorist.

Unfolded and set up along the roadside as a warning to approaching traffic, the signal displays two bright red reflectors of "Lucite" acrylic resin which can be seen more than a half-mile away. While the reflectors are primarily a night-time warning device, a red flag is supplied which can be attached to the signal during daylight hours as an added safety factor.

During 1954, it is estimated that more than 41 million disabled vehicles were stalled along the nation's highways. This device, now being offered by a Chicago manufacturer, is aimed at reducing the number of "sitting duck" accidents which annually involve drivers and passengers of many of those stalled cars.

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Here's the collapsible highway warning device as it might be used in event of a tractor and trailer breakdown along the roadside.

NEW FIELDS FOR RESEARCH

An Editorial

It's reported that when Gladstone visited the laboratory of Michael Faraday to observe results of an early research triumph in the field of electricity, the then Chancellor of the Exchequer gazed intently at Faraday's apparatus, then questioned sharply: "What good is it?"

"Why Sir," Faraday replied unruffled, "presently you will be able to tax it."

Recently, a new word showed up in our vegetable vocabulary -- the zumpkin, which the Connecticut Agricultural Experiment Station obligingly defines as a hybrid cross between Zucchini squash and pumpkin.

Had he been confronted with the Gladstone question during early stages of zumpkin development, the plant breeder responsible for this new variety might have replied with conviction: "Some day you may be able to eat it." And sure enough, the zumpkin is edible in most stages when cooked as a summer squash.

Today, however, researchers and experimenters are no longer prime targets for sarcastic and cynical questions, jeering and scoffing. Our generation has developed a genuine respect for the power of man's inquisitiveness to accomplish the seemingly impossible, since it has seen corn cobs yield a chemical that helps make nylon, petroleum derivatives become crop-saving insecticides, and has been awed by the energy released by nuclear fission.

These developments which are shaping our Twentieth Century lives have not resulted from political activities or governmental enactments. They reflect the bending of man's will and determination and intellect toward the solutions of physical problems that lay as stumbling blocks in our path toward greater understanding of the marvels of this earth. The net result of each such accomplishment extends a little further that fund of technological know-how that mankind has been building and passing on since the beginnings of human time.

Yet great as the stumbling blocks in our physical world have been, we are only now becoming vaguely aware of the huge boulders that need to be rolled away in the world of human emotions and understanding. While research in chemistry, biology, and the other physical sciences continues to provide us with better tools for living, there is great need for intensive research into human behavior if we are to enjoy in increasingly abundant life.

There are encouraging signs of a growing awareness that this "human research" is all important. We see it in the international farm youth exchange program, and in the visits of committees of common citizens between nations that are at opposite political poles.

No other piece of research work was ever undertaken under the impelling urgency which should drive us in this new field of human research. For somewhere in the realm of man's mutual respect for his fellow man we must isolate and culture a passion for peace and good will which can unleash a force for good so powerful it will render the H-bomb as obsolete as the sling-shot!

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* EXPERIMENTERS' NOTATIONS *
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A Round-up of Data from Across the Nation

Recent tests show that the new filter materials for face masks and respirators will filter out dangerous amounts of organic phosphate insecticides. The new materials, tested by USDA, include a special grade of fine-fiber wood pulp, a fine-fiber asbestos, and a glass wool impregnated with a resin. Previously used fine dust, activated charcoal filters would protect against chlorinated hydrocarbons and some organic phosphates, but not the most highly penetrative ones.

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New and better methods of controlling European corn borer are disclosed in a recent report from the Ankeny, Iowa, experimental station. Granular forms of EPN, DDT, and heptachlor were used. The insecticide granules tend to be held in leaf whorls where they will do the most good in contacting the borer, and their use results in less residue on parts of the stalk used for fodder or silage. The tests showed that EPN at a half-pound active ingredient per acre was equal to DDT or heptachlor at one and a half pounds for control of this pest.

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One of the newer "Karmex" herbicide formulations, "Karmex" DW, has passed Oregon State College research trials for removal of both weedy grasses and broadleaf weeds from certain grass seed crops. "Karmex" DW killed most weeds without injuring stands of bentgrass, alta fescue, Merion bluegrass and creeping red fescue. The dosage was two pounds per acre. For control of velvet grass in all but the creeping red fescue, a four-pound-per-acre dosage did the job without injuring the crop.

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Based on a study of pear crop tonnages in Oregon's Hood River Valley, it has been pointed out that the Anjou harvest in that area increased about 300,000 boxes per year from the time "Fermate" ferbam fungicide and "Zerlate" ziram fungicide were first introduced there in 1944 through 1950. The credit is given to these dithiocarbamates as the major factors in this increase because actual blossom counts showed 30 per cent increase in fruit set where this fungicide was used.

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